

Incidence of congenital dislocation of the hip in Hungary

A. CZEIZEL, J. SZENTPÉTERY AND M. KELLERMANN

Laboratory of Human Genetics, National Institute of Public Health, Budapest and Department of Orthopaedics, Békés County Hospital, Békéscsaba, Hungary

SUMMARY

Of the 18,219 live births registered in Békés County (Hungary) in the period 1970-72, 523 infants came to treatment for congenital dislocation of the hip. The diagnosis was verified by radiography. The incidence of 28·7 per 1,000 live births is consistent with the values noted in a previous study conducted in Budapest. Differences in applying diagnostic criteria, the high proportion of first-born infants, the unhealthy swaddling customs, and the supposedly higher occurrence of genetic predisposition to congenital dislocation of the hip may account for the high incidence, which is much greater than values reported in countries of Western Europe and North America.

INTRODUCTION

The incidence of congenital dislocation of the hip (CDH) varies widely in different geographic areas. Earlier reports put the incidence at 0·7-2·2 per 1,000 live births in Western and Northern Europe, the United States of America, and Canada (McIntosh *et al.*, 1954; Record and Edwards, 1958; Harris, Lipscomb, and Hodgson, 1960; Palmén, 1961; von Rosen, 1962). Studies on other population groups revealed considerably lower or higher incidence rates. Several factors may account for the discrepancy. A possible factor is the position in which the hips of newborn infants are fixed during the early months of development by the various types of swaddling. Low incidences have been reported among Negroes in certain parts of Africa where swaddling is not used (Edelstein, 1964), and in China and Korea (Hodgson, 1961) where the mother carries the child on her back with the hips in flexion and abduction as in a 'natural' Pavlik's stirrup. Incidence is remarkably high in Lapps (22-50 per 1,000) (Wessel, 1918; Getz, 1955) and in certain North American Indian tribes (31-67 per 1,000) such as Apaches

(Kraus and Schwartzmann, 1957), Navajos (Coleman, 1968), and Manitobans (Corrigan and Segal, 1950). It is the practice among these groups to swaddle the child tightly to a cradleboard, so that limb movement is much restricted up to the age of 1-3 years. Another factor responsible for the variation in incidence may be differences in methods of diagnosis. When early screening for CDH was introduced and extensively utilized in the United Kingdom the reported incidence increased four- to six-fold (Wilson, 1964; Finlay, Maudsley and Busfield, 1967; Wynne-Davies, 1970). Genetic factors may also play some part.

In an earlier study the incidence of treated CDH was found to be 27·5 per 1,000 live births in Budapest (Czeizel, Vizkelety, and Szentpéteri, 1972). The results of the survey were received with scepticism in some quarters, although in 30% of the patients early signs of CDH (Ortolani click and Barlow's sign) were present, while in the rest the diagnosis of CDH was invariably verified by radiography. The present study was undertaken to find out the validity of our earlier results. This time the study was conducted in a country region, and more precise, unambiguous criteria were used.

MATERIAL AND METHODS

Hungary has 19 counties. Békés County, situated at a considerable distance from Budapest, is of a rural character. Over 6,000 live births are registered each year. The great majority (about 96%) of deliveries take place in maternity hospitals. Since 1969 practically all newborn infants have been screened for CDH. Suspect cases are referred to either of the two orthopaedic departments operating in the County, where meticulous physical examination is carried out. For some cases a type of abduction swaddling is recommended and the

patients are kept under observation for various periods of time. In the third to fourth months of life the radiologically verified cases of CDH will receive treatment which usually consists of the application of Pavlik's stirrup.

It was our aim to determine the incidence (more exactly the point prevalence at birth) of CDH in infants born in Békés County between 1 January 1970 and 31 December 1972. The patients were traced from the case records of the two orthopaedic departments in July–August 1973. Only cases treated for CDH with positive radiological findings were considered. Teratological and secondary types of CDH and laxity of the hip joint were excluded from the study, as were proven cases of CDH born to parents living in other counties. Multiple recording was avoided by identifying the personal data of each patient.

RESULTS AND DISCUSSION

A total of 18,219 live births were registered in Békés County in the period 1970–72. Of these, 523 infants came to treatment for radiologically verified CDH in the orthopaedic departments of the County, giving an incidence of 28.71 per 1,000 live births. The figure may be slightly below the true value as some infants may have died before the abnormality was detected and others, though born in the County, may have been treated elsewhere. However, it seems likely that such cases were rare.

The Table shows the distribution of CDH cases according to the year of birth. There is a marked difference in incidence, an observation made also by von Rosen (1970). The proportion of males was 14.7%.

The incidence of 28.7 per 1,000 live births revealed by this study for Békés County is in close agreement with the figure (27.5) reported previously for Budapest.

Clinical data and the report by Pap (1954) suggest that the incidence of manifest CDH had been 4 to 5 per 1,000 for the period 1940–50. Since extensive screening for CDH among neonates usually results

in a four- to six-fold increase of CDH incidence, the 27.5 and 28.7 values noted in our studies seem to confirm estimates made in the past.

The fact that a remarkably high incidence of CDH was found in the Hungarian population as compared with other Caucasian (European) races may be related to the following factors:

(1) differences in the definition and diagnostic criteria of CDH. It is likely that in Hungary diagnosis is established on less definite clinical and radiological signs than elsewhere. This practice is adopted so that preventive measures can be taken against CDH and against arthrosis developing later in life;

(2) the demographic structure of the Hungarian population. The total number of births is low throughout the country. Consequently a high proportion of children are first-born (about 65% in Budapest) among whom the incidence of CDH is relatively high;

(3) the tight swaddling extensively practised in the past (Figs. 1 and 2) and occasionally still to be found;

(4) the role of an underlying genetic predisposition, neither proved nor excluded with certainty.

Nevertheless on the basis of old and recent experiences of Hungarian experts in this field it seems highly probable that the Hungarian and—in general—the Central European, e.g., Czecho-Slovak populations, have higher incidences of obvious CDH than the Western European and North American countries. The incidence of other congenital abnormalities in Hungary does not appear to be excessive in comparison with other European countries (Czeizel, 1972).

The above contributory factors may account for the finding that almost 3% of Hungarian liveborn infants are treated for CDH.

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TABLE
INCIDENCE OF TREATED CDH VERIFIED BY RADIOGRAPHY PER 1,000 LIVE BIRTHS IN BÉKÉS COUNTY, 1970–72

Sex	1970	1971	1972	Total	
				No.	Per 1,000
Male	27	17	33	77	8.13
Female	151	130	165	446	50.57
Total	178	147	198	523	28.71
Per 1,000	29.04	24.46	32.58	28.71	



FIG. 1. The unhealthy custom of swaddling was common in Central Europe, as shown in Dürer's engraving.



FIG. 2. The tight swaddling was common in Hungary, as shown in an unknown master's (17th century) painting.

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